GLOBAL LIVESTOCK CRSP

# Constraints Limiting Marketed Livestock Offtake Rates Among Pastoralists

Christopher B. Barrett and Sharon Osterloh, Cornell Univ.;
Peter D. Little, University of Kentucky; and
John G. McPeak, Syracuse University
Pastoral Risk Management Project

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*Marketed livestock offtake rates are commonly low among pastoralists in the arid and semi-arid lands of east Africa. Many donors and policymakers have therefore emphasized the importance of interventions to directly address constraints that limit offtake so as to stimulate greater use of markets as a means both to increase incomes and wealth and to improve pastoralists' capacity to manage regular climatic shocks. Yet few of the hypothesized causes of limited marketed offtake have been tested explicitly. Using detailed household data collected every three months in southern Ethiopia and northern Kenya, we are able to identify which hypotheses seem credible for explaining limited marketed offtake. We find that lack of information, cash transaction costs to market participation and limited access to financial savings instruments do not appear to limit livestock marketing. The main constraint on livestock marketing appears to be the limited attractiveness of alternative, non-livestock investments in the study region. In summary, we find scant empirical support for many of the claims commonly made in current discussions of how best to stimulate livestock marketing offtake among pastoralist in this region. The best strategy appears to be generalized support for viable pastoralism.*

## Background

Pastoralists in east Africa's arid and semi-arid lands (ASAL) regularly confront climatic shocks that cause massive herd die-offs and loss of scarce wealth. Yet marketed livestock offtake rates are commonly low among east African pastoralists. Stimulating marketed offtake by pastoralists, especially in times of stress, in order to convert even a modest share of mortality losses into sales, could avert widespread, acute human suffering and potentially accelerate herd recapitalization once range conditions recover.

The literature is rife with hypotheses for pastoralists' low average marketed livestock off-take rates, including structural constraints ranging from a lack of viable investment alternatives to livestock, high costs and risks of marketing, and quarantine and border closure, as well as social constraints related to livestock's role in local marriage and exchange networks. Using quarterly repeated household-level observations, 2000-2002, from 330 households across eleven sites in northern Kenya and southern Ethiopia, we explore various hypotheses of the low marketed offtake rate puzzle so as to establish where policy or project interventions might be able to stimulate increased livestock offtake by pastoralists, with the intent of identifying feasible interventions that might induce conversion of mortality losses into sales proceeds during drought.

## Major Findings

Almost all sample households participate in livestock markets, albeit often in relatively small volumes and at varying rates over time. More than nine out of ten households in our survey sample used livestock markets during the two year survey period. Market participation rates were slightly higher in northern Kenya than in southern Ethiopia and declined steadily after the peak of the drought in June 2000.

The most active household participants in livestock markets own greater numbers of livestock. Households that neither sold nor bought animals own an average of 10.8 tropical livestock units (TLUs), while the households participating in markets most frequently average holdings of over 40 TLUs.

Though ASAL regions are net exporters of animals, net sales volumes are relatively low per household, limiting regional integration into broader national and international trade patterns. Eighty percent of households participated in livestock markets as net sellers, while only 8 percent purchased more animals than they sold (and 12 percent had neither net sales nor net purchases). Quantities traded tend to be small. In no three month period were average net sales greater than 1 TLU for those selling animals. This is consistent with the hypothesis that livestock sales, especially of small ruminants (i.e., goats and sheep), are driven largely by households' immediate cash needs for school fees, medical care, social events, etc.,

*Table 1. Percent of households marketing livestock.*

| % HHs Marketing Livestock In Quarter Ending … | Jun-00 | Sep-00 | Dec-00 | Mar-01 | Jun-01 | Sep-01 | Dec-01 | Mar-02 | Jun-02 | HHs Marketing Livestock Over 2 Yrs |
|---|---|---|---|---|---|---|---|---|---|---|
| Dirib Gombo | 68% | 42% | 21% | 19% | 10% | 26% | 29% | 19% | 0% | 97% |
| Kargi | 70% | 37% | 40% | 20% | 47% | 60% | 28% | 40% | 33% | 97% |
| Logo Logo | 43% | 47% | 25% | 37% | 30% | 13% | 37% | 7% | 7% | 87% |
| Ngambo | 43% | 40% | 41% | 43% | 30% | 13% | 6% | 6% | 3% | 87% |
| North Horr | 53% | 50% | 54% | 27% | 67% | 41% | 45% | 24% | 17% | 94% |
| Suguta Marmar | 60% | 40% | 30% | 40% | 13% | 33% | 23% | 47% | 7% | 90% |
| Kenya Weighted Avg | 56% | 43% | 35% | 31% | 33% | 31% | 28% | 24% | 11% | 92% |
| | | | | | | | | | | |
| Dida Hara | 57% | 37% | 23% | 20% | 23% | 27% | 39% | 30% | 37% | 90% |
| Dillo | 43% | 33% | 20% | 23% | 17% | 17% | 33% | 33% | 30% | 87% |
| Finchawa | 58% | 48% | 73% | 45% | 48% | 32% | 45% | 10% | 7% | 100% |
| Qorate | 13% | 23% | 0% | 20% | 20% | 0% | 23% | 3% | 33% | 63% |
| Wachille | 30% | 37% | 20% | 43% | 20% | 20% | 32% | 33% | 23% | 93% |
| Ethiopia Weighted Avg | 40% | 36% | 27% | 30% | 26% | 19% | 34% | 22% | 26% | 87% |

although we cannot test this hypothesis explicitly in these data. If that interpretation proves correct, then there are limited immediate gains to be reaped by ASAL pastoralists from generalized stimulus to regional and international livestock markets because those households are not heavy net sellers of animals and they tend not to sell animals to invest in other enterprises.

Markets are not commonly used for restocking by sample households. Partly this is attributable to insufficient cash liquidity, and partly to a dearth of breeding stock in livestock markets, as more than two-thirds of live animal transactions in Marsabit and Moyale, 1997-2000, were males (Barrett et al. 2003). Purchases account for less than ten percent of net recruitment into herds. These rates vary markedly over time, however, peaking at 10-23 % of additions to cattle herds in the immediate aftermath of the 2000 drought, then falling to only 1-6% of net recruitment by late 2001 and 2002. Poorer households rely more heavily on market purchases for restocking, as they do not have sufficient herds to reconstitute a herd through breeding (Little et al., 2003). In contrast, wealthier households rely almost exclusively on natural reproduction, often purchasing livestock to diversify risk by investing in alternate types or species.

Several oft-heard hypothesized explanations for low marketed offtake rates do not find support in our data. A lack of price and climate information or forecasts does not appear to limit pastoralist livestock marketing (Luseno et al. 2003). On average, pastoralist households received livestock price information from two sources, primarily through traders. Although few respondents go to market themselves to observe transactions first-hand in order to collect price information, informal information networks generate and distribute reliable, timely information about livestock market conditions. Sample households check on livestock prices frequently. 45% of our Kenyan sample checked on market prices at least every few days, while 80% in Kenya and 68% in Ethiopia checked their primary source of livestock price information at least every few weeks. In short, pastoralists in our study region seem to have good enough access to climate and price information through existing channels that lack of information does not significantly limit marketed offtake.

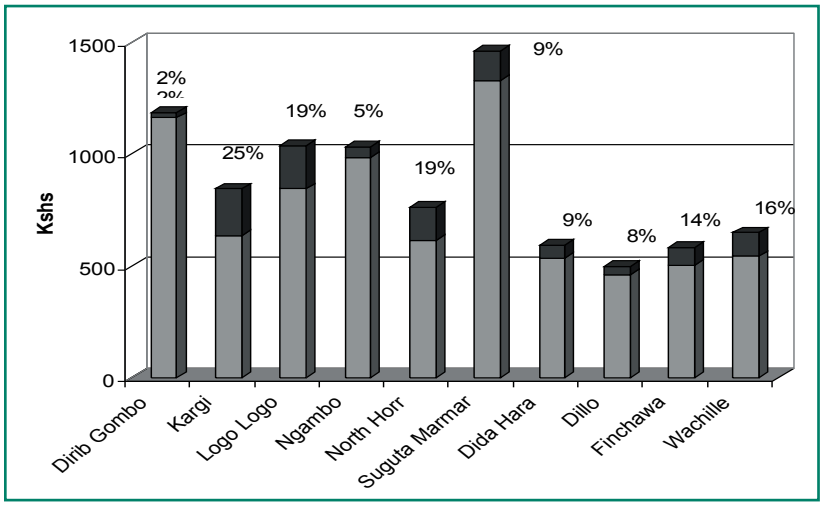
Similarly, transaction costs to market participation do not seem to pose a serious obstacle to sample households' marketing. 67 percent of Kenyan market participants and 79 percent of Ethiopian sample households incur cash costs in livestock transactions, though the percentage of those incurring fees varies greatly according to site. In sites close to large markets, few respondents reported incurring cash marketing costs, while in more remote and pastoral sites, the trek to town more likely involves out-of-pocket expenditures on transportation, lodging, and food.

Sample households' cash transaction costs in livestock marketing are nonetheless relatively low. For small ruminants, marketing costs ranged from two percent in areas close to major towns, to 25 percent in more remote areas (Figure1). For larger species (i.e., camels, cattle), sample households' cash marketing costs averaged less than 10 percent of the sale price in every site.

This informal impression that cash marketing costs do not pose a big impediment to livestock marketing appears borne out by econometric analysis, as marketing costs have no statistically significant effect on either market participation or net livestock sales volume (Osterloh et al. 2004).

It likewise does not appear true that insufficient access to financial institutions in which one might safely keep livestock sales proceeds constrains pastoralists' livestock marketing. Those sample households that held bank accounts were actually slightly less likely to sell animals than those without

*Figure 1. Cashing marketing costs per animal as a percent of prices: Goats and Sheep.*




bank accounts, reinforcing the hypothesis that livestock sales are largely in response to immediate cash needs, which bank account holders can meet through financial savings rather than liquidation of livestock.

So what does explain low marketed offtake rates among ASAL pastoralists? One fundamental reason is a dearth of other, more attractive investment opportunities. Financial savings are commonly whittled away by banking fees, by loss of share value in locally owned microfinance institutions, or by claims from family and neighbors. And nonpastoral businesses are themselves very risky enterprises. Although pastoralists' expected herd mortality rates are increasing in their ex ante herd size, keeping a big herd nonetheless remains the best investment available in the ASAL today (Lybbert et al. forthcoming, McPeak forthcoming).

The complex property rights that surround livestock likewise seem to reduce sample households' net livestock sales (Osterloh et al. 2004). In the study region, animals are often given or loaned to others in times of need. While the exact arrangements of gifts and loans vary subtly across ethnic groups and clans and over time, perhaps the most common arrangements give the borrower rights to the milk and any offspring born to the borrowed animal(s), while ownership claims over the loaned animal(s) remain with the lender. As a consequence, traditional livestock loaning and gifting arrangements appear to dampen sample households' livestock marketing. The complex property rights regimes that underpin social safety nets in the region thus constrain livestock marketing, but also allow redistribution of animals among households through a non-market mechanism.

Insecurity and the resulting strength of ethnic ties within livestock trader networks likewise seem to impede marketing. Livestock have long been subject to raids from other ethnic groups, and other clans within ethnic groups. The threat of raids poses big risks to livestock traders. To manage the risk of transporting large amounts of cash across long distances from Northern Kenya to Nairobi and vice versa, traders frequently use informal 'money services' to allow cash from Nairobi sales to be received in Northern Kenya and place partners in the Nairobi market, where they better enforce payments from large meat wholesalers (Mahmoud, 2003). Greater than 95 percent of these partnerships are among members of the same ethnic group.

Detailed transactions data likewise reveal that quarantines are a significant source of price risk and that they reduce expected livestock prices received by pastoralists (Barrett et al., 2003). Quarantine erects barriers to trade by impeding commerce and thinning markets in pastoral regions. These effects not only exacerbate risk but also cause substantial revenue losses for herders. Though the effects of quarantine upon livestock prices at terminal markets in Nairobi are negligible, Barrett et al. (2003) find significant negative effects on the prices received and the price variability faced by pastoralists. Pastoralist producers absorb the price shock created by quarantines, simultaneously insulating both Nairobi consumers and protecting highland ranchers. As these subpopulations are much wealthier than pastoralists, quarantines appear to be a distributionally regressive means of animal disease control, wherein the poor pay the costs of benefits captured largely by wealthier citizens.

## Practical Implications

Pastoralists in northern Kenya and southern Ethiopia participate actively in livestock markets. But the volumes transacted are small, limiting the possibility of any significant near term impact due to stimulus to broader regional and international marketing opportunities. Market transactions are almost exclusively sales, primarily of goats and sheep, for the most part, it seems, to meet household's immediate cash expenditure needs. There is no strong price response, apparently because prices move largely with the net present value of animals, as determined by prevailing health and range conditions, and because pastoralists balance long-term herd-building objectives with short-term consumption smoothing objectives when deciding whether and what to sell. Bank accounts earning negative returns are poor substitutes for livestock in accumulating wealth, cash marketing costs incurred by pastoralist households are surprisingly modest, and information on climate and prices does not significantly limit pastoralist market participation or sales volumes.

Overall, the strongest correlate of livestock marketing is

herd size, suggesting that preserving or restoring the viability of large herds is the single most important factor in stimulating livestock marketing expansion in the arid and semi-arid lands of northern Kenya and southern Ethiopia. In sum, we find scant empirical support for many of the claims commonly made in current discussions of how best to stimulate livestock marketing off-take among pastoralist in this region. The best strategy appears to be generalized support for viable pastoralism.

Interventions probably make a greater difference at the level of livestock traders, for whom transport costs and physical insecurity pose problems more than for individual pastoralists. Quarantines and other impediments to trade in livestock clearly reduce the number of traders present in markets, reducing aggregate demand and thereby lowering prices and increasing the price risk faced by herders seeking to sell animals. Better control of security and improved transportation and market infrastructure would benefit traders and general market conditions in northern Kenya, as would curtailment of the use of outdated quarantine measures for animal disease control.

## Further Reading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*About the Authors:* Chris Barrett is International Professor of Applied Economics and Management, Cornell University, Ithaca, NY 14853-7801 USA, email: cbb2@cornell.edu. Peter Little is Professor and Chair of the Department of Anthropology, University of Kentucky. Email: PDlitt1@pop.ukyedu. John McPeak is Assistant Professor of Public Administration and Economics, Syracuse University. Email: jomcpeak@maxwell.syr.edu. Sharon Osterloh is a graduate student in Applied Economics at Cornell University. E-mail: smo22@cornell.edu.


The GL-CRSP Pastoral Risk Management Project (PARIMA) was established in 1997 and conducts research, training, and outreach in an effort to improve welfare of pastoral and agro-pastoral peoples with a focus on northern Kenya and southern Ethiopia. The project is led by Dr. D. Layne Coppock, Utah State University, Email contact: lcoppock@cc.usu.edu.

The Global Livestock CRSP is comprised of multidisciplinary, collaborative projects focused on human nutrition, economic growth, environment and policy related to animal agriculture and linked by a global theme of risk in a changing environment. The program is active in East Africa, Central Asia and Latin America.


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